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REMARKS

Claims 1-42 are pending in the application. Claims 37, 39 and 41 have been amended herein to address the indefiniteness rejection. Favorable reconsideration of the application, as amended, is respectfully requested.

I. ALLOWABLE SUBJECT MATTER

Applicants continue to acknowledge with appreciation the allowance of claims 1-36.

II. REJECTION OF CLAIMS 37-42 UNDER 35 USC §112, 2nd ¶

Claims 37-42 remain rejected under 35 USC §112, second paragraph, as being indefinite. Withdrawal of the rejection is respectfully requested for at least the following reasons.

Applicants have adopted the Examiner's suggestion of amending claims 37, 39 and 41 to refer to "input data" in place of simply "data". However, such amendment is not intended to be substantive in any way, but merely respond to the Examiner's desire for identifying data to be scrambled as "input data" as opposed to the scrambled data and the scramble data. Furthermore, introducing the term "input data" does not presuppose that any step of inputting data is essential to the claimed invention.

In view of the above, withdrawal of the rejection is respectfully requested.

III. REJECTION OF CLAIMS 37-42 UNDER 35 USC §102(e)

Claims 37-42 also remain rejected under 35 USC §102(e) based on *Murakami et al.* (USP 5,671,226). This rejection is respectfully traversed for at least the following reasons.

As noted by the Examiner, applicants argued in their previous response that the "scramble data itself has a value that is randomly determined". For example, claim 37 specifically recites:

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37. (Twice Amended) A method for scrambling input data, comprising the steps of:
generating scramble data having a value which is randomly determined;
generating a pseudo-random number sequence in accordance with the value of the scramble data; and
generating scrambled data by performing a logical operation on the pseudo-random number sequence and said input data.

Thus, as applicants previously argued the value of the scramble data itself is randomly determined. The pseudo-random number sequence is then generated in accordance with the randomly determined value of the scramble data. Applicants pointed out in their arguments how Murakami et al. does not teach or suggest such features.

The Examiner contends that such limitation is not clearly described in the specification. The Examiner argues that nothing in the drawings suggests "scrambling(sic) data" has a value that is randomly determined.

The Examiner correctly points out that pseudo random number sequences are "random numbers" that have values that are randomly determined. Typically such pseudo random number sequences are generated based on an initial or "seed" value. In the present invention, however, the initial or "seed" value is itself randomly determined. This initial or "seed" value in claim 37 is referred to as the "scramble data" which is generated so as to have a random value. This random value "seed" is then used to generate the pseudo random number sequence which, as the Examiner suggests, has values that are randomly determined.

Regarding the Examiner's feelings that there is nothing in the specification or drawings that suggests the scramble data has a value that is randomly determined, the Examiner's attention is directed to Col. 25, line 53 to Col. 26, line 33 which reads as follows:

The scramble data recorded in the SCL section and the sector address recorded in the DATA ID section indicate one of the initial bit patterns of a plurality of predetermined pseudo-random number sequences. The scramble processing is performed on main data by performing a logical operation (e.g., an exclusive-

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OR operation) on a series of random numbers beginning with the initial bit pattern and the main data to be recorded onto the optical disk.

The data unit shown in FIG. 8 can be obtained by recording the scrambled main data onto the MAIN DATA section and adding the scramble data and the like thereto. When an error correction code is added to the data unit, then the total byte number becomes 2366 bytes. After these bytes are digitally modulated, a sync code represented by a synchronizing signal (2 bytes) is inserted into these bytes on a 91-byte basis, thereby forming the 26 sync frames shown in FIG. 10. Each of the synchronizing signals SY0, SY1, . . . SY7 is a combination of "0" bits and "1" bits, and has a unique pattern.

As a result, the total byte number becomes 2418 bytes corresponding to the DATA section included in the sector format shown in FIG. 9.

In this example, the pseudo-random number sequence is selected based on not only the scramble data but also a sector address. The reason is as follows. If the sector address is neglected, then a plurality of signals having high interrelation which have been scrambled by the same pseudo-random number sequence may be recorded onto adjacent tracks on the optical disk 28. In such a case, the tracking performance or the like becomes disadvantageously unstable. Thus, in this example, sector addresses are taken into consideration to ensure that mutually different pseudo-random number sequences are selected for adjacent tracks.

All of the six bits of the scramble data recorded in the SCL section are ordinarily set to be "0", for example. However, if the low frequency components of the signal to be recorded have increased abnormally (i.e., if the DSV has diverged), an arbitrary number of bits of the six bits are set to be bits other than "0". If all of the six bits of the scramble data are set to be "0", the scrambling is not performed. On the other hand, if an arbitrary number of bits of the six bits of the scramble data are set to be bits other than "0", the scrambling is performed.

It is noted that data associated with the times that a rewrite operation has been performed may be set as the scramble data when the data is rewritten. Alternatively, data obtained based on the random numbers or data obtained by combining these types of data may also be set as the scramble data. (Emphasis Added).

Accordingly, the specification describes how the scramble data based upon which pseudo-random number sequence is selected need not be a fixed value or fixed set of values. Rather, the scramble data may be "obtained based on the random numbers or data obtained by combining these types of data". (See, e.g., Col. 26, Ins. 31-33).

The Examiner is correct that the application discusses using a type of fixed value or values as the scramble data. However, the application clearly supports an alternative embodiment in which the scramble data is a randomly determined. Such

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approach is highly advantageous as described in the application. Namely, by randomly determining the scramble data, there avoids being a high correlation between signals compared to signals generated based on a scramble data having a fixed value or values. (See, e.g., above quoted text).

Accordingly, applicants respectfully submit that the application does in fact describe scramble data having a value which is randomly determined as highlighted above. As pointed out in the specification, scramble data which is randomly determined provides superior results compared to using scramble data having a fixed value or values to generate the pseudo-random number sequence.

Consequently, applicants previous remarks regarding the distinctions between the present invention and *Murakami et al.* still apply. Namely, the Examiner contends that Fig. 20(a) of *Murakami et al.* illustrates a method and recording medium for scrambling and recording scrambled data as recited in the claims. The Examiner may be correct that the pseudo-random number generator 73a outputs a pseudo-random number sequence which is logically operated upon the data 71. However, applicants note that claims 37-42 refer to the pseudo-random number sequence being generated in accordance with the value of the scramble data, which *the scramble data itself has a value that is randomly determined*.

In *Murakami et al.*, the reference simply states that the pseudo-random number generator 73a generates a pseudo-random number sequence 74a responsive to an initial value 72a. (See, e.g., Column 2, lines 59-67). *Murakami et al.* does not teach or suggest that the initial value 72a itself has a value which is randomly determined. Thus, *Murakami et al.* is subject to the same shortcomings described in the present application where a same initial value 72a is used as a seed to generate a pseudo-random number sequence. (See, e.g., USP 5,898,394, Column 26, lines 10-15).

Claims 37, 39 and 41 each recite generating a pseudo-random number sequence in accordance with a value of a scramble data "which is randomly determined". For the reasons explained above, *Murakami et al.* does not teach or suggest an initial or "seed" value 72a "which is randomly determined" as recited in claims 37, 39 and 41.

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As a result, withdrawal of the rejection of claims 37, 39 and 41, together with the claims dependent therefrom, is respectfully requested.

IV. CONCLUSION


Accordingly, all claims 1-42 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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APPENDIX

IN THE CLAIMS:

Claims 37, 39 and 41 have been amended as follows:

37. (Twice Amended) A method for scrambling input data, comprising the steps of:

- generating scramble data having a value which is randomly determined;
- generating a pseudo-random number sequence in accordance with the value of the scramble data; and
- generating scrambled data by performing a logical operation on the pseudo-random number sequence and said input data.

39. (Amended) A method for recording information onto a recording medium, comprising the steps of:

- generating scramble data having a value which is randomly determined;
- generating a pseudo-random number sequence in accordance with the value of the scramble data;
- generating scrambled data by performing a logical operation on the pseudo-random number sequence and input data; and
- recording the scramble data and the scrambled data onto the recording medium.

41. (Amended) A recording medium for recording information thereon, wherein scramble data and scrambled data are recorded onto the recording medium,

- the scramble data has a value which is randomly determined,
- and the scrambled data is obtained by generating a pseudo-random number sequence in accordance with the value of the scramble data and by performing a logical operation on the pseudo-random number sequence and input data.